

What is claimed is:

1. An image processing method for obtaining processed image data by carrying out tone conversion processing and color correction processing on image data obtained by a digital camera,  
5 the image processing method comprising the steps of:

generating a three-dimensional look-up table for carrying out the tone conversion processing and the color correction processing on the image data; and

10 obtaining the processed image data by converting the image data according to the three-dimensional look-up table.

2. An image processing method as defined in Claim 1, wherein the step of generating the three-dimensional look-up table is a step of generating the three-dimensional look-up table for a model of the digital camera.

15 3. An image processing method as defined in Claim 1, further comprising a step of setting a number of lattice points in the three-dimensional look-up table according to a number of bits of the image data.

20 4. An image processing method as defined in any one of Claims 1 to 3, further comprising a step of:

comparing a number of pixels in an image represented by the image data with the number of lattice points in the three-dimensional look-up table,

25 the step of generating the three-dimensional look-up table being a step of generating the three-dimensional look-up table in the case where the number of the pixels is larger than the

number of the lattice points, and

the step of obtaining the processed image data being a step of obtaining the processed image data by converting the image data according to the three-dimensional look-up table in the case where the number of the pixels is larger than the number of the lattice points, and by carrying out the tone conversion processing and the color correction processing on each of the pixels in the image represented by the image data in the case where the number of the pixels is equal to or smaller than the number of the lattice points.

5. An image processing method for obtaining processed image data by carrying out tone conversion processing and color correction processing on image data, the image processing method comprising the steps of:

comparing a number of lattice points in a three-dimensional look-up table used for carrying out the tone conversion processing and the color correction processing on the image data with a number of pixels in an image represented by the image data;

generating the three-dimensional look-up table and obtaining the processed image data by converting the image data according to the three-dimensional look-up table in the case where the number of the pixels is larger than the number of the lattice points; and

obtaining the processed image data by carrying out the tone conversion processing and the color correction processing

on each of the pixels in the image represented by the image data, in the case where the number of the pixels is equal to or smaller than the number of the lattice points.

6. An image processing method as defined in Claim 5, further comprising a step of setting the number of lattice points in the three-dimensional look-up table according to the number of bits of the image data.

7. An image processing apparatus for obtaining processed image data by carrying out tone conversion processing and color correction processing on image data obtained by a digital camera, the image processing apparatus comprising:

three-dimensional look-up table generating means for generating a three-dimensional look-up table used for carrying out the tone conversion processing and the color correction processing on the image data; and

processing means for obtaining the processed image data by converting the image data according to the three-dimensional look-up table.

8. An image processing apparatus as defined in Claim 7, wherein the three-dimensional look-up table generating means generates the three-dimensional look-up table according to a model of the digital camera.

9. An image processing apparatus as defined in Claim 7, wherein the three-dimensional look-up table generating means sets the number of lattice points of the three-dimensional look-up table according to the number of bits of the image data.

10. An image processing apparatus as defined in any one of Claims 7 to 9, the three-dimensional look-up table generating means being means for comparing the number of pixels of an image represented by the image data with the number of lattice points in the three-dimensional look-up table, and for generating the three-dimensional look-up table if the number of the pixels is larger than the number of the lattice points, and

the processing means being means for obtaining the processed image data by converting the image data according to the three-dimensional look-up table if the number of the pixels is larger than the number of the lattice points, and for obtaining the processed image data by carrying out the tone conversion processing and the color correction processing on each of the pixels of the image represented by the image data if the number of the pixels is equal to or smaller than the number of the lattice points.

11. An image processing apparatus for obtaining processed image data by carrying out tone conversion processing and color correction processing on image data, the image processing apparatus comprising:

three-dimensional look-up table generating means for comparing the number of lattice points in a three-dimensional look-up table used for the tone conversion processing and the color correction processing on the image data with the number of pixels in an image represented by the image data, and for generating the three-dimensional look-up table in the case where

the number of the pixels is larger than the number of the lattice points; and

processing means for obtaining the processed image data by converting the image data according to the three-dimensional look-up table in the case where the number of the pixels is larger than the number of the lattice points, and for obtaining the processed image data by carrying out the tone conversion processing and the color correction processing on each of the pixels in the image represented by the image data, in the case where the number of the pixels is equal to or smaller than the number of the lattice points.

12. An image processing method as defined in Claim 11, wherein the three-dimensional look-up table generating means sets the number of the lattice points in the three-dimensional look-up table according to the number of bits of the image data.

13. A computer-readable recording medium storing a program to cause a computer to execute an image processing method for obtaining processed image data by carrying out tone conversion processing and color correction processing on image data obtained by a digital camera, the program comprising the procedures of:

generating a three-dimensional look-up table for carrying out the tone conversion processing and the color correction processing on the image data; and

obtaining the processed image data by converting the image data according to the three-dimensional look-up table.

14. A computer-readable recording medium as defined in Claim 13, wherein the procedure of generating the three-dimensional look-up table is the procedure of generating the three-dimensional look-up table for a model of the digital camera.

15. A computer-readable recording medium as defined in Claim 13, the program further comprising the procedure of setting the number of lattice points in the three-dimensional look-up table according to the number of bits of the image data.

16. A computer-readable recording medium as defined in any one of Claims 13 to 15, the program further comprising the procedure of:

comparing the number of pixels in an image represented by the image data with the number of lattice points in the three-dimensional look-up table,

the procedure of generating the three-dimensional look-up table being the procedure of generating the three-dimensional look-up table in the case where the number of the pixels is larger than the number of the lattice points, and

the procedure of obtaining the processed image data being the procedure of obtaining the processed image data by converting the image data according to the three-dimensional look-up table in the case where the number of the pixels is larger than the number of the lattice points, and by carrying out the tone conversion processing and the color correction processing on each of the pixels in the image represented by the image data

in the case where the number of the pixels is equal to or smaller than the number of the lattice points.

17. A computer-readable recording medium storing a program to cause a computer to execute an image processing method for obtaining processed image data by carrying out tone conversion processing and color correction processing on image data, the program comprising the procedures of:

comparing a number of lattice points in a three-dimensional look-up table used for carrying out the tone conversion processing and the color correction processing on the image data with a number of pixels in an image represented by the image data;

generating the three-dimensional look-up table and obtaining the processed image data by converting the image data according to the three-dimensional look-up table in the case where the number of the pixels is larger than the number of the lattice points; and

obtaining the processed image data by carrying out the tone conversion processing and the color correction processing on each of the pixels in the image represented by the image data, in the case where the number of the pixels is equal to or smaller than the number of the lattice points.

18. A computer-readable recording medium as defined in Claim 17, the program further comprising a procedure of setting the number of lattice points in the three-dimensional look-up table according to a number of bits of the image data.